

REMARKS

The Applicant has filed the present Amendment pursuant to 37 C.F.R. § 1.116 and in reply to the outstanding Official Action of August 26, 2003. The Applicant submits that the Amendment is fully responsive to the Final Rejection for reasons set forth below.

In the present Final Rejection, the Examiner objected to Claim 12 because of informalities identified in the Final Rejection. The Examiner first rejected Claim 12 pursuant to 35 U.S.C. § 112, second paragraph, as allegedly indefinite for failing to provide sufficient antecedent basis, as identified in the Final Rejection. The Examiner further rejected Claims 2 and 12 pursuant to 35 U.S.C. § 112, second paragraph, as allegedly indefinite for failing to point out and distinctly claim the subject matter that the Applicant regards as the invention, for the reasons set forth in the present Final Rejection. Lastly, the Examiner rejected Claims 2 and 12 pursuant to 35 U.S.C. § 103(a), as allegedly unpatentable over Jensen, et al. (Bioinformatics Apr. 2000, Vol. 16, No. 4, pages 326-333) (hereinafter "Jensen") in view of Eisen (ScanAlyze, Stanford University 1998-9) (hereinafter "Eisen").

At the outset and before addressing the objections and rejections raised in the present Final Rejection, the Applicant has amended Claims 2 and 12 to clarify the steps of generating first array and the second array for use in analyzing the structure of the target array, as particularly recited in the independent Claims 2 and 12. More specifically, the Applicant has amended the foregoing Claims to make clear the first and second arrays are generated to correspond to the target array and corresponding elements in the first array and second array are changed as the target array is traversed. The target array is not changed. Support for generating the first array is found in the specification on page 20, line 1 to page 22, line 6 in view of Fig. 3 (See specifically the example on page 22, line 6). Support for generating the second array is found in the specification on page 22, line 8 to page 24, line 17 in view of Fig. 4 (See specifically the example page 24, line 17). The present amendment is necessary to comply with the Examiner's request in paragraph 7 of the Final Rejection, as will be addressed hereinbelow. The Applicant respectfully submits that no new subject matter has been entered via this Amendment.

The Applicant has further amended the preamble of Claim 2 to be consistent with that of Claim 12. More specifically, the preamble of Claim 2 recites a method for analyzing the structure of a target array consisting of a plurality of different elements. In addition, the Applicant has amended Claim 12 to clarify that it is the target array that is traversed. The Applicant respectfully submits that no new subject has been entered via this amendment.

Regarding the objection to Claim 12, the Applicant has amended Claim 12 to remove the informalities identified by the Examiner on page 2 of the Final Rejection. More specifically, on line 5 of Claim 12, the Applicant has replaced the phrase "that that" with a term "that." Consequently, the Applicant respectfully requests the Examiner to withdraw the objection to Claim 12.

Regarding the rejection of Claims 2 and 12 pursuant to 35 U.S.C. § 112, second paragraph, the Applicant respectfully submits that Claims 2 and 12 are definite, and they particularly point out and distinctly claim the subject matter the Applicant regards as the invention. More specifically, the Applicant has first amended Claims 2 and 12 to make clear the first array and second array correspond to the target array and corresponding elements of the first array and second array are changed as the target array is traversed. It is noted that the elements (variables) of the target array are not changed. Once the target array is traversed, the first array and the second array are used to analyze the structure of the target array. Regarding the Examiner's request for clarification of the term "target array" in paragraph 7 of the Final Rejection, the Applicant respectfully submits that an "array" is a term of art in computer science that represents a set of elements in an ordered sequence. An example of an array may be a string array, which is an ordered sequence of characters that can be accessed as subscripts into the string array. The present invention is concerned with analyzing the structure of mRNA or DNA sequences. The target array for DNA is represented by an array having A, T, C, G elements (characters), while the target array for the mRNA is represented by an array having A, U, C, G elements (characters) (See present specification page 19, lines 15-22). Therefore, the Applicant respectfully submits that the term "target array" is definite and unambiguous. Consequently, the Applicant respectfully requests the Examiner to withdraw the rejection of Claims 2 and 12 pursuant to 35 U.S.C. § 112, second paragraph.

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In traversing the rejection of the independent Claims 2 and 12 pursuant to 35 U.S.C. § 103(a), the Applicant respectfully submits that the Jensen-Eisen combination is defective in that it fails to teach or suggest a method for analyzing the structure of a target array, as particularly recited in the foregoing independent Claims 2 and 12. The Applicant respectfully submits that the primary prior art reference to Jensen has no relevance to the method recited in Claims 2 and 12. More specifically, where as the claimed method is for analyzing the structure of a target array (using first and second generated arrays), Jensen's method is just for finding patterns in an array (not analyzing the structure of its array). Jensen's method cannot be extended for analyzing the structure of a target array (i.e. mRNA or DNA sequences). That is, Jensen fails to teach or suggest the step of traversing the target array and replacing in the first array a corresponding variable using the location of the same variable along a path extending in a predetermined direction, as particularly recited in Claims 2 and 12. Jensen is completely deficient in this regard. Instead, Jensen teaches finding patterns in its array that comprises a list of patterns. Jensen further fails to teach or suggest the step of traversing the target array and replacing in the second array a corresponding variable using the location of the complementary variable along a path extending in a predetermined direction, as particularly recited in Claims 2 and 12. Again, Jensen is completely deficient in this regard. Instead, as already mentioned above Jensen teaches finding patterns in its array that comprises a list of patterns. However, to the contrary of Jensen, the present method analyzes the structure of the target array by using the first and second arrays, which include the structural information for the target array (i.e. a mRNA or DNA sequence).

The Applicant respectfully submits that the secondary prior art reference to Eisen does not rectify the above-identified deficiencies in Jensen. That is, Eisen likewise has no relevance to the method recited in Claims 2 and 12. More specifically, whereas the claimed method is directed to analyzing the structure of a target array (using first and second generated arrays), Eisen is directed to analyzing an image of a DNA microarray (See Eisen, page 4). The Applicant respectfully submits that the two terms of art are competently distinct. An array, which includes elements or variables (e.g., characters), is completely distinct from a microarray, which is an apparatus that includes spots (See Eisen page 4, third full paragraph). The processing of a spots in the microarray apparatus

is completely different from the above-described analysis of the structure of the array having elements or variables. As abovementioned, an array is a computer science term of art representing a set of elements in an ordered sequence (e.g., characters in a string array). Thus, Eisen cannot be applied to the claimed invention because the problem Eisen solves is totally disparate from the claimed invention. Unlike Eisen, which analyzes an image of a DNA microarray, the present invention analyzes DNA or RNA sequences as arrays of elements (e.g., arrays of "ATCG..." and "AUCG..."). Consequently, the Jensen-Eisen combination does not teach or suggest a method of analyzing the structure of the target array, as particularly recited in the independent Claims 2 and 12.

In view of the foregoing, the Applicant respectfully requests the Examiner to withdraw the rejection of the independent Claims 2 and 12 pursuant to 35 U.S.C. § 103(a).

In sum, the Applicant believes that the above-identified application is in condition for allowance and the Applicant henceforth respectfully solicits the Examiner to allow the application. If the Examiner believes a telephone conference might expedite the allowance of this application, the Applicant respectfully requests that the Examiner call the undersigned, Applicant's attorney, at the following telephone number: (516) 742-4343.

Respectfully submitted,



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